

# STUSB1602 Software Library for STM32F446 User Guide

[Home](#) » [ST](#) » STUSB1602 Software Library for STM32F446 User Guide 

## STUSB1602 Software Library for STM32F446 User Guide



### Contents

- [1 Introduction](#)
- [2 SW library set-up](#)
- [3 Suggested Hardware requirements](#)
- [4 Software package Overview](#)
- [5 Documents / Resources](#)
- [6 Related Posts](#)

### Introduction

This document provides an overview of the STUSB1602 software package enabling USB PD stack with NUCLEO-F446ZE and MB1303 shield

SOFTWARE	
<b>STSW-STUSB012</b>	STUSB1602 software library for STM32F446
<b>IAR 8.x</b>	C-code compiler
HARDWARE	
<b>NUCLEO-F446ZE</b>	STM32 Nucleo-144 development board
<b>P-NUCLEO-USB002</b>	STUSB1602 Nucleo Pack containing <b>MB1303</b> shield (Nucleo expansion board to be plugged on NUCLEO-F446ZE)

## SW library set-up

1. Download the STUSB1602 software package by searching STSW-STUSB012 from [www.st.com](http://www.st.com) home page:



2. Then click on “Get Software” from either the bottom or top of the page



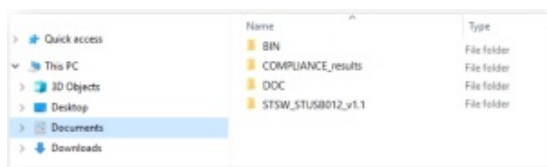
3. Download will start after accepting the License Agreement, and filling contact information.



4. Save the file en.STSW-STUSB012.zip on your laptop



and unzip:



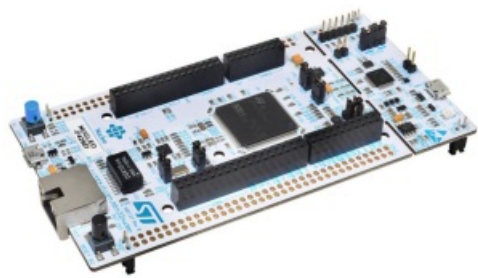
5. The package contains a DOC directory, ready-to-use binary files, associated projects and compliance reports

## Suggested Hardware requirements

The software library has been optimized to quickly compile on the NUCLEO-F446FE development board stacked with MB1303 expansion board (from P-NUCLEO-USB002 package).

MB1303 is composed of 2 Dual Role Ports (DRP) USB PD capable receptacles (form factor not optimized)

- NUCLEO-F446ZE



- MB1303



### NUCLEO-F446ZE Hardware set-up

```
Readme_Nucleo_Hardware_mod.txt - Notepad
File Edit Format View Help
*****
** Hardware modifications to be done on MB1137 **
** in order to use MB1303 shield offering      **
** 2 USBPD ports based on STUSB1602 + STM32F446ZE **
*****

Remove:
SB118
SB5
SB6
R37 (for 2nd port LEDs)
R38 (for 2nd port LEDs)

Close
SB144 (for 2nd port LEDs)
SB145 (for 2nd port LEDs)
Add:
38 pins connectors on both CN11 and CN12

For Trace:
add wire between PA9-CN9(pin21) of MB1303 and CN5-RX on Nucleo-MB1137

Windows (CRLF) Ln 5, Col 46 100%
```

### Software package Overview

The software library includes 8 different software frameworks (+ 3 without RTOS) already optimized to address most common application scenario:

	Project	Typical Application

<b>#1</b>	STM32F446_MB1303_SRC_ONLY(*)	Provider / SOURCE (power management)
<b>#2</b>	STM32F446_MB1303_SRC_VDM	Provider / SOURCE (power management) + extended message support
<b>#3</b>	STM32F446_MB1303_SNK_ONLY(*)	Consumer / SINK (power management)
<b>#4</b>	STM32F446_MB1303_SNK_VDM	Consumer / SINK (power management) + extended message support + UFP support
<b>#5</b>	STM32F446_MB1303_DRP_ONLY (*)	Dual Role Port (power management) + dead battery mode
<b>#6</b>	STM32F446_MB1303_DRP_VDM	Dual Role Port (power management) + dead battery mode + extended message support + UFP support
<b>#7</b>	STM32F446_MB1303_DRP_2ports	2 x Dual Role Port (power management) + dead battery mode + extended message support + UFP support
<b>#8</b>	STM32F446_MB1303_DRP_SRCING_DEVICE	Dual Role Port requesting PR_swap when attached in Sink or DR_swap when attached in Source

- by default, all projects are packaged with RTOS support
- project annotated with a (\*) are available with and without RTOS support

For more details, please check Firmware Package documentation:

en:STSW-STUSB012 Firmware package documentation-v2 1.1 23-Oct-2020

en:STSW-STUSB012-v1.1.0 > STSW-STUSB012\_v1.1

Name

STM32F446\_M81303\_DRP\_2PORTS

STM32F446\_M81303\_DRP\_ONLY

STM32F446\_M81303\_DRP\_ONLY\_noRTOS

STM32F446\_M81303\_DRP\_SRCING\_DEVICE

STM32F446\_M81303\_DRP\_VDM

STM32F446\_M81303\_SNK\_ONLY

STM32F446\_M81303\_SNK\_ONLY\_noRTOS

STM32F446\_M81303\_SNK\_VDM

STM32F446\_M81303\_SRC\_ONLY

STM32F446\_M81303\_SRC\_ONLY\_noRTOS

STM32F446\_M81303\_SRC\_VDM

ST

life.augmented

STSW-STUSB012

Firmware package documentation

V2.1

STUSB

Documents / Resources

STM32F446\_M81303\_DRP\_2PORTS

STM32F446\_M81303\_DRP\_ONLY

STM32F446\_M81303\_DRP\_ONLY\_noRTOS

STM32F446\_M81303\_DRP\_SRCING\_DEVICE

STM32F446\_M81303\_DRP\_VDM

STM32F446\_M81303\_SNK\_ONLY

STM32F446\_M81303\_SNK\_ONLY\_noRTOS

STM32F446\_M81303\_SNK\_VDM

STM32F446\_M81303\_SRC\_ONLY

STM32F446\_M81303\_SRC\_ONLY\_noRTOS

STM32F446\_M81303\_SRC\_VDM

ST

life.augmented

STSW-STUSB012

Quick Start Guide

Download software

Ready for STSW012-v1

STSW012

[ST STUSB1602 Software Library for STM32F446](#) [pdf] User Guide

STUSB1602, Software Library for STM32F446

Manuals+